

**Notice of Allowability**

Application No.

09/970,356

Applicant(s)

VAUDREY ET AL.

Examiner

Art Unit

Devona E. Faulk

2644

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 10/3/2001.
2. ☒ The allowed claim(s) is/are 6-18.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 10/3/2001
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

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## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because of line quality. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jon Roberts (Reg. No. 31,293) on 5/27/2005.

3. The application has been amended as follows:

**CLAIMS:**

**Claims 1-5:** Cancel

**Claim 6, line 7:** delete "whereby", insert -- wherein --.

**Claim 11, line 1:** delete "system", insert --control method--.

**Claim 13, line 1:** delete "system", insert -- control system --.

**Claim 14, line 1:** delete "method", insert - system --.

**Claim 15, line 1:** delete "method", insert - system --.

**Claim 16, line 1:** delete "method", insert - system --.

**Claim 17, line 1:** delete "method", insert - system --.

**Claim 18, line 1:** delete "system", insert -- control system --.

**Reasons For Allowance**

4. Claims 6-18 are allowed.

5. The following is an examiner's statement of reasons for allowance:

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Regarding **claims 6 and 12**, prior art Chabries et al. (U.S. Patent 4,658,426) discloses an adaptive noise suppressor having a first microphone for generating a first microphone signal containing primarily speech and noise and a second microphone for generating a first microphone signal containing primarily noise, a frequency domain adaptive filter generating an output, and an error signal generated by subtracting a first microphone signal from a control output signal. Prior art Yin (U.S. Patent 6,418,404) discloses a system and method for implementing fixed masking thresholds in an audio encoder device including a lookup table storing frequency threshold data. Prior art Zinser, Jr. et al. (U.S. Patent 4,649,505) discloses a two input crosstalk resistant adaptive noise canceller having a first and second adaptive filter but neither of the filters are frequency domain adaptive filters. Prior art Flannagan et al. (U.S. Patent 5,815,496) discloses Flanagan discloses an echo canceller, which is analogous to noise canceling) having adaptive filters and teaches that either of the adaptive filters can have as few as one real tap. Prior art Ikeda (U.S. Patent 5,953,380) discloses that focus a noise canceling method and apparatus including a specific method for controlling the convergence parameter. Prior art W.S. Gan (Parallel Implementation of the Frequency Bin Adaptive Filter For Acoustical Echo Cancellation) discloses an acoustic echo cancellation system for use in teleconferencing system or video conferencing system using a frequency bin adaptive filter. The prior art of combination thereof fails to disclose " a frequency domain adaptive controller generating a control

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output having a series of frequency domain threshold values and a frequency domain comparator; whereby the Fourier transform of said control output is compared to said frequency domain threshold values using said frequency domain comparator to generate a series of convergence parameters used to update the frequency domain adaptive controller" and " a second frequency domain adaptive filter having multiple filter coefficients, a series of stored frequency domain threshold values, and a frequency domain comparator".

Claims 7-11 and 13-18 are allowed due to dependency on claims 6 and 12 respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**

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